



The Science of a Healthier Life®

November/December 2025

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Gail
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REVIEW

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REPORTS



A New Approach to Improve Intestinal Health

In individual **clinical trials**, a novel **postbiotic**, two **probiotics**, and four **phages** helped *alleviate* various aspects of **gastrointestinal discomforts**.

16 CURB HUNGER TO LOSE WEIGHT

In a clinical trial of **overweight adults**, taking a blend of **plant extracts**, along with a modest diet and exercise program, led to close to **5% weight loss** in just **two months**.

24 BENEFITS OF BLUEBERRY

Clinical results reveal that **blueberries** *improved* **cardiovascular** health, metabolic status, blood **sugar**, and brain function. Another **human** study found they may protect aging **bones**.

32 VITAMIN D REDUCES SYMPTOMS OF DEPRESSION

Clinical trials found that oral **vitamin D** may improve outcomes or reduce symptoms of **depression** and improve **brain connectivity**.

52 STOP FEELING OLD!

In a **clinical trial** of aging men and women, two plant extracts *boosted* **vitality** and **muscle strength**.

62 ASTAXANTHIN AND YOUR BRAIN

Clinical data show that taking **astaxanthin** significantly *improved* **cognitive function**, **memory**, and **learning**. In other studies, daily astaxanthin protected against neuronal cell death.

70 RESEARCH UPDATE: IMPROVING BRAIN AGING WITH SENOLYTICS

A recent article in the journal *Neuron* linked **immune** dysfunction with **cognitive** decline. Preclinical data suggests that **senolytic** compounds *remove* **senescent cells**, helping to potentially protect the aging **brain** and improve some immune functions.

78 HEALTHIER AGING

L-ergothioneine, an amino acid found in **mushrooms**, was shown in preclinical research to protect **telomeres**. In human trials, **L-ergothioneine** *improved* **cognitive ability** and **cardio-metabolic function**.

90 REDUCE NIGHTTIME BATHROOM VISITS

In a clinical trial, a combination of **five compounds** helped *reduce* **nocturia symptoms** in men. After 60 days, not a *single* subject reported waking more than once a night to urinate.

DEPARTMENTS

10 IN THE NEWS

Pro-inflammatory foods increase frailty risk in older adults; mushroom extract slows prostate tumor growth; probiotic lowers gastrointestinal injury risk in cardiac bypass patients; vitamin K2 reduces vascular stiffness in postmenopausal women.





LIFE EXTENSION®

The Science of a Healthier Life®

November/December 2025

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Customer Service: 800-678-8989 • Email: customerservice@LifeExtension.com

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LIFE EXTENSION (ISSN 1524-198X) November/December 2025 ©2025 is published monthly except bi-monthly in April by LE Publications, Inc. at 3600 West Commercial Blvd., Fort Lauderdale, FL 33309-3338. LE Publications, Inc. All rights reserved. Published 13 times a year. Subscription rate: \$40 per year in the United States. US \$47 in Canada. US \$60 in other countries. Mail subscriptions or address changes to: LE Publications, Inc., P.O. Box 407198, Fort Lauderdale, FL 33340-7198, USA. Or phone us toll-free at: 1-800-841-5433. Canada Subscriptions: Publications mail agreement number 40028967. Return undeliverable Canadian addresses to PO Box 503, RPO West Beaver Creek, Richmond Hill, ON L4B4R6. You will be sent your first issue within six weeks after LE Publications, Inc. receives your subscription fee. Periodicals Postage paid at Fort Lauderdale, FL and at additional mailing offices. POSTMASTER: Send address changes to Life Extension, P.O. Box 407198, Ft. Lauderdale, Florida 33340-7198, USA. Printed in USA. The articles in this magazine are intended for informational purposes only. They are not intended to replace the attention or advice of a physician or other health-care professional. Anyone who wishes to embark on any dietary, drug, exercise, or other lifestyle change intended to prevent or treat a specific disease or condition should first consult with and seek clearance from a qualified health-care professional. LEGAL NOTICE: Health claims contained in articles and advertisements in this publication have not been approved by the FDA with the exception of FDA-approved, qualified health claims for calcium, antioxidant vitamins, folic acid and EPA and DHA omega-3 fatty acids, and selenium as noted where applicable. *Life Extension Magazine*® does not endorse any of the businesses or the products and/or services that may appear in advertisements for non-Life Extension branded products or services contained in it, except to state that they are advertisers who may have paid Life Extension for placement of an advertisement in this publication. Life Extension disclaims any and all responsibilities or warranties as to the accuracy of information contained in advertisements for non-Life Extension branded products or services. For Canadian customers send change of address information and blocks of undeliverable copies to P.O. Box 1051, Fort Erie, ON L2A 6C7.

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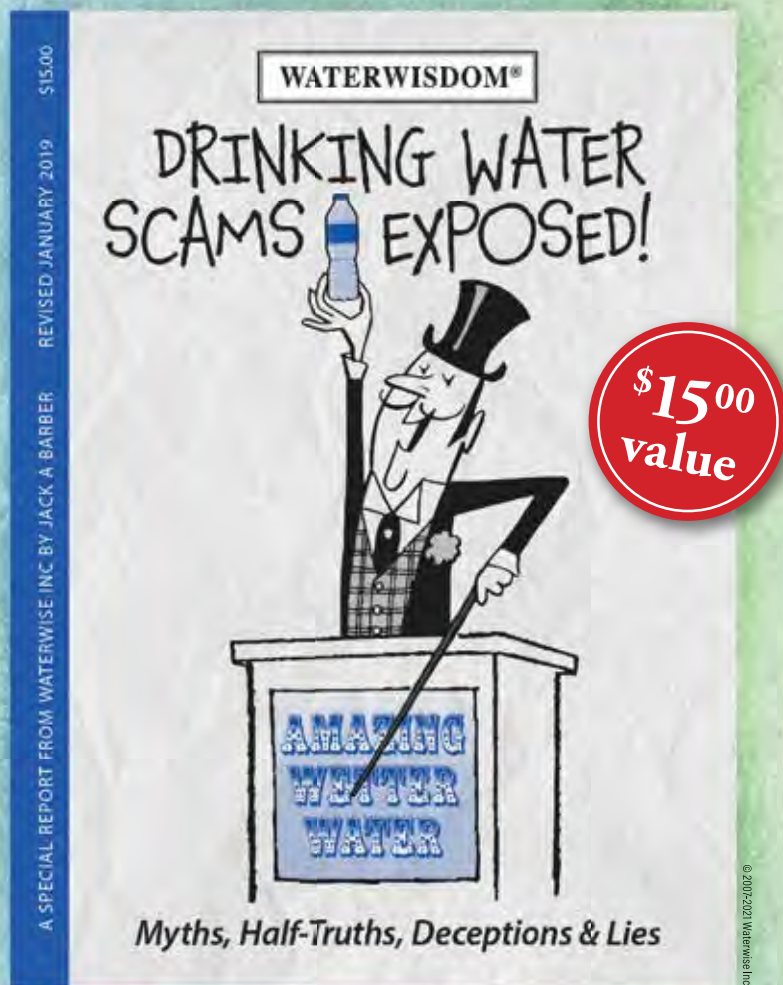
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In the News

Frailty Risk in Older Adults Increased by Pro-Inflammatory Diet

Regularly eating pro-inflammatory foods increases the likelihood of frailty in older adults, according to a study published in the *American Journal of Clinical Nutrition*.*

Based on the food frequency questionnaires of around 1,700 healthy adults from the Framingham Heart Study, researchers found that a pro-inflammatory diet was linked with an increased odds of frailty over a 12-year period. A one-point higher **DII score** (a score that assesses the impact of diet on inflammation status) was associated with **16%** greater odds of developing frailty over that time period.

The **25%** of participants who had the greatest consumption of *pro*-inflammatory foods were more than **twice** as likely to develop frailty, compared to the **25%** who had the greatest consumption of *anti*-inflammatory foods.

Editor's Note: "...dietary strategies to reduce pro-inflammatory foods (simple carbohydrates and high-fat foods) and increase anti-inflammatory foods (dietary fiber and dietary antioxidants) may have a significant role in prevention of frailty," the authors concluded.

* *Am J Clin Nutr*. 2021 Sep 24;nqab317.



White Button Mushrooms Slow Prostate Tumor Growth

According to a report published in *Clinical and Translational Medicine*, research findings suggest a benefit of white button mushrooms in both animal and human models of prostate cancer.*

Researchers studied the effects of white button mushrooms in mouse models of prostate cancer and in men under active surveillance for the disease who participated in a clinical trial.

In mice, the consumption of white button mushroom powder suppressed tumor growth and decreased the number and function of myeloid-derived suppressor cells, which are associated with cancer development and spread. This reduction led to an increase in T cell and natural killer cell antitumor immune responses.

Among men, blood samples collected from eight participants at the beginning of the trial and at three months after white button mushroom supplementation revealed similar findings.

Editor's Note: White button mushroom powder enhanced the efficacy of immune checkpoint inhibitors in mouse models of prostate cancer, thereby suggesting its potential adjuvant role in immunotherapy regimens for prostate cancer.

* *Clin Transl Med*. 2024 Oct;14(10):e70048.



Probiotic Reduces Gastrointestinal Injury Risk in Cardiac Bypass Patients

Supplementing with probiotics prior to heart valve replacement with cardiopulmonary bypass can help reduce the risk of acute gastrointestinal injury, according to a randomized, double-blind, placebo-controlled trial published in *BMC Medicine*.*

For the study, 52 people were assigned to receive either a multi-strain probiotic or a placebo daily for seven days prior to surgery.

During a 30-day follow-up period, **42%** of the placebo group developed acute gastrointestinal injury, compared to **15%** in the probiotic group, an absolute risk reduction of **27%**.

Editor's note: The probiotic group also had a lower incidence of developing an infection in the hospital (**12%** vs. **35%**), and a one-day shorter average hospital stay (five vs. six days).

* *BMC Med*. 2025 Apr 23;23(1):238.

Vitamin K2 Reduces Blood Vessel Stiffness in Postmenopausal Women

A study that included women with low vitamin K status found less blood vessel stiffness among those who were postmenopausal and who received menaquinone-7 (MK-7), a form of vitamin K2.*

The study analyzed 165 premenopausal, perimenopausal, and postmenopausal women with low vitamin K status who had participated in a previous trial, and about half received **180 mcg** MK-7 or a placebo for one year.

Women who received MK-7 showed improved vitamin K status at the end of one year. Among postmenopausal women, who had worse vascular factors at the beginning of the study than premenopausal and perimenopausal women, vascular stiffness was significantly reduced in the group that received MK-7 compared with the placebo.

Editor's Note: The women were subsequently evaluated according to whether they had high or low vascular stiffness at the beginning of the study. Postmenopausal women with a high stiffness index who received MK-7 had improved blood vessel markers, including lower arterial systolic blood pressure and improved indicators of blood vessel elasticity at the end of the trial.

* *Nutrients*. 2025 Feb 27;17(5):815.





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* Br J Pharmacol. 2004 Mar;141(5):825-30.

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1
DAILY

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Curb Hunger to Lose Weight





BY MARSHA MCCULLOCH, MS, RD

Nearly **75%** of U.S. adults are **overweight** or **obese**.¹

That's a major health problem.

Being overweight or obese, and having excess body fat, increases the risk of chronic diseases, including metabolic disorders, **heart disease**, **hypertension**, and **type 2 diabetes**.²

The good news is that losing as little as **5%** of body weight can slightly lower blood pressure, improve blood sugar, and raise good cholesterol.^{3,4}

In a clinical trial in overweight adults, taking a blend of **lemon verbena leaf** and **hibiscus flower** extracts, along with a modest diet and exercise program, led to close to **5%** weight loss in just *two months*.⁵

That was nearly **70%** more weight loss than those who received placebo.

Additional clinical trials show that this blend can help boost **feelings of fullness** (satiety),^{6,7} improve body weight,⁷⁻⁹ and lower **blood pressure**.^{8,10}

The Problem with Weight Loss

A nagging appetite can make it difficult to lose weight.¹¹

People who go on diets frequently gain the weight back.¹²

When calories are restricted, metabolism and the hormones that control hunger are altered. These changes can make it harder to lose more weight and keep it off.^{13,14}

After weight loss, the body makes more **ghrelin**, a hormone that increases hunger. It may also produce less **GLP-1**, a hormone that helps you feel full.¹⁴

Fortunately, extracts of two plants, **hibiscus** and **lemon verbena**, are effective **non-drug** options for appetite control and weight loss.

Help Shedding Pounds

In a **clinical trial**, 46 overweight or obese women were given either a standardized **500 mg** blend of **lemon verbena leaf** and **hibiscus flower extracts** or a **placebo** 20-30 minutes before breakfast daily for 60 days.⁸

They were also encouraged to follow a moderate **2,200-calorie** diet and walk 30 minutes per day.

The extract group showed enhanced satiety and lost over **8-10 pounds**, over **5%** of their weight, in just **two months**. This was roughly **twice** the weight loss of the placebo group.⁸



Curbing Appetite

In an earlier **clinical trial**, overweight and obese adult women took **500 mg** of the **lemon verbena-hibiscus** extract blend or a placebo daily before breakfast. Participants were advised to consume **2,200** calories and walk at least half an hour daily during the two-month study.⁵

Compared to placebo, the **extract group** showed **higher** levels of the appetite-suppressing **GLP-1** hormone.

Ghrelin levels increased in the **placebo** group but remained stable in the **extract-supplemented** group. These two hormonal changes were associated with greater satiety and **reduced hunger**, as measured by validated scales throughout the intervention.⁵

In another randomized, double-blind, placebo-controlled crossover trial, similar results were observed. Participants who took the extract reported greater fullness and consumed about **9%** fewer calories during an unrestricted meal.⁶

This lower-calorie intake coincided with a **12%** increase in satiety-promoting **GLP-1** after breakfast and a **22%** increase in **GLP-1** after lunch.⁶

In a randomized controlled trial published in 2024, 61 healthy overweight adults took a **lemon verbena-hibiscus extract blend** or a placebo 30 minutes before breakfast for three months.⁷

By the end of the study, the extract group reported **12%** improvement in **hunger satisfaction** one hour after breakfast. Satiety did not improve in the placebo group.⁷

Researchers attributed the weight loss to the extract blend's ability to improve **appetite regulation**.^{5,6}

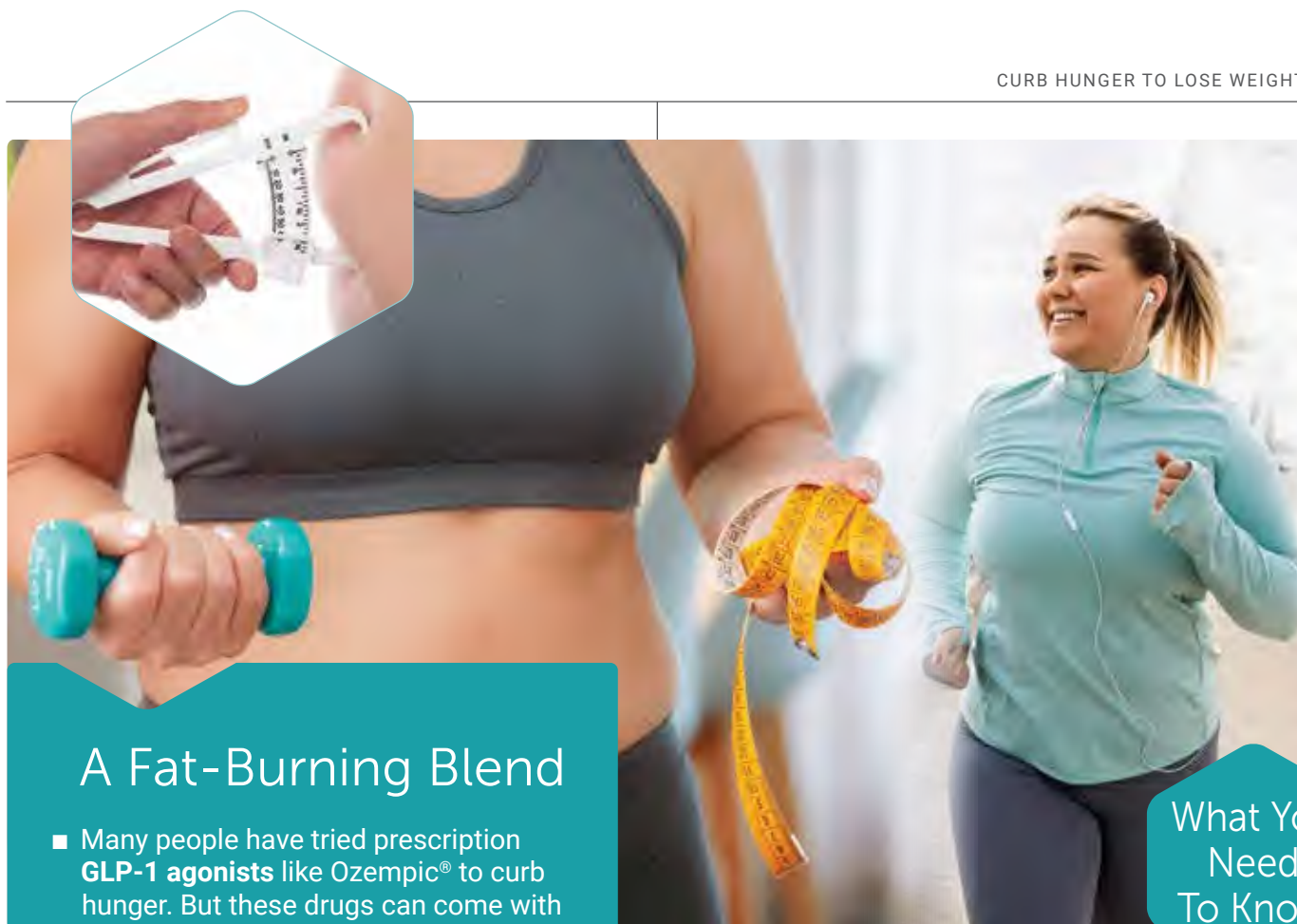
Better Body Composition

There's a common problem with weight reduction: it can result in the loss of both fat and lean tissue, including **muscle**.¹⁵ This is a potential concern with **GLP-1 agonist** drugs.¹⁶

In a 12-week trial, healthy but sedentary overweight adults took **500 mg** of the combined **lemon verbena-hibiscus extracts** or a **placebo** daily while maintaining their usual eating and lifestyle habits.^{9,17}

The extract group achieved a **6.9%** decrease in **body fat** compared to the baseline, while ***maintaining their muscle***





A Fat-Burning Blend

- Many people have tried prescription **GLP-1 agonists** like Ozempic® to curb hunger. But these drugs can come with gastrointestinal and other side effects.
- A blend of **lemon verbena leaf** and **hibiscus flower** extracts works in a similar way, with evidence that it may boost levels of the appetite-suppressant hormone **GLP-1** *without side effects*. These extracts also promote **fat burning**.
- In clinical trials, this extract blend reduced body weight by about **5%** within two months (**70%-100% more** weight loss than placebo), trimmed belly size by **2.3-2.5 inches**, and reduced **blood pressure**.

What You
Need
To Know

Burning Fat

The boost in fat loss by the **lemon verbena-hibiscus** blend may be explained, in part, by its ability to activate an **enzyme** called **AMPK (activated monophosphate protein kinase)**.^{6,19}

AMPK signals cells to **burn fat** for energy and store less fat.¹⁹ With age, **AMPK** activity drops significantly.^{20,21}

Other preclinical research suggests **polyphenols** in the extracts support the growth of beneficial **gut bacteria** in ways that may promote AMPK activity and weight control.²²

Lower Blood Pressure

The benefits of the **lemon verbena leaf-hibiscus** flower blend extend to **metabolic health**.

As discussed above, in one randomized controlled trial, overweight or obese women took **500 mg** of the extracts or a placebo before breakfast for two months, while following a **2200** calorie diet and walking 30 minutes daily.⁸

mass. The placebo group had little change.

The extract group also had a decrease in **abdominal fat**.⁹ This kind of fat, also called **visceral fat**, is closely associated with a higher risk of **cardiovascular** and **metabolic disease**.¹⁸

In the **2024** study, those taking the extracts had a **5.7%** reduction in **body fat** over three months and an **8.2%** reduction in **abdominal fat**. Again, no significant muscle loss occurred.⁷

While the **placebo** group experienced little change, the **extract blend-supplemented** groups experienced the following:

- In overweight women, a drop of **16%** (over **20 mmHg**) in **systolic blood pressure** (top number) from baseline, while obese women saw their systolic blood pressure go down by more than **14%** (over **18 mmHg**).⁸
- Reduction in **abdominal circumference** (belly size) on average of about **2.5 inches** in the overweight group, and over **2.33 inches** in the **obese group**.⁸
- Decrease in **resting heart rate** of over **8.5 beats per minute** in the overweight group, and eight beats per minute in the obese group.⁸ An elevated resting heart rate is a key predictor of **mortality**.²³

The extract was well-tolerated with no side effects.⁸

This weight loss and improved metabolic health can support overall healthy aging.

Summary

A blend of extracts of **lemon verbena leaf** and **hibiscus flower** has demonstrated weight loss and metabolic benefits.

The blend has been clinically shown to result in an amount of weight loss known to reduce **chronic disease risk** in just two months when supported by moderate dietary changes and light physical activity.

The extract blend helps with weight loss by promoting **fat burning** and a feeling of **fullness**. ■

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"Works great!"

Eric

VERIFIED CUSTOMER
REVIEW



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D3, the sunshine vitamin, is key to strong bones and immune health

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focused on living your
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A close-up photograph of a pair of hands cupped together, holding a large quantity of fresh, dark blue blueberries. The berries are piled high in the center of the hands, with some showing a small stem scar. The background is a soft, out-of-focus blue. In the bottom left corner, there are faint, light blue hexagonal patterns.

Multiple Systems Affected by BLUEBERRIES



BY MARSHA MCCULLOCH, MS, RD

Blueberries have gained a reputation as a “super-fruit” because of research into their **anthocyanins** and the powerful benefits they provide.¹

In clinical trials published over the last several years, blueberries:

- Boosted **brain processing speed**,²
- Reduced **blood pressure**³ and improved **blood lipids**,⁴ and
- Stabilized **blood sugar** and **insulin** levels.^{5,6}

Preclinical research and a human trial have also shown that blueberries could help bolster **bone health**.⁷

Daily intake of **blueberry extract** is a convenient way to get the full benefits of this remarkable fruit.

Health-Promoting Properties

Blueberries are one of the richest sources of plant compounds called **anthocyanins**, which give the fruit its color.¹

Anthocyanins are the key bioactive compounds associated with reduced risk of **cardiovascular** disease, **metabolic syndrome**, and **cognitive decline**, as supported by both epidemiological and clinical evidence.^{1,5,8}

Wild blueberries have higher total **anthocyanins** than regular, cultivated blueberries.^{1,9}

Some of the likely mechanisms behind the benefits of anthocyanins include:

- Mitigating **inflammation** and **oxidative stress**, drivers of aging and most chronic diseases,^{1,10,11}
- Shifting the **gut microbiome** to include more beneficial bacteria,^{11,12} and
- Fueling the production of **beneficial byproducts** from gut bacteria.¹³

Studies show that a range of blueberry forms, including fresh berries, freeze-dried powder, and extracts, all have health benefits.^{1,3,5,10}



Energizing the Brain

Brain processing speed refers to how quickly your brain takes in, understands, and responds to information. It impacts memory, task completion, and other areas of cognitive function.²

Processing speed typically slows with age, beginning at **midlife**.¹⁴

In a trial of 86 older adults with **mild cognitive decline**, they took either an amount of **wild blueberry powder** equal to about **1.5 cups** of whole blueberries or a placebo daily.²

After six months, cognitive testing and brain imaging showed that the **blueberry group's information processing speed** was faster than the **placebo group's**. Remarkably, their speed had increased to match a comparison group of older adults **without cognitive issues**.²

Blueberries may improve cognitive function by promoting healthy blood vessel function and increasing **blood flow** to the brain.^{15,16}

Lowering Blood Pressure

Optimal blood vessel function also promotes healthy **blood pressure**.

In a trial, 61 healthy older adults took wild blueberry powder equal to **one cup** of blueberries or a placebo daily for three months.³

According to 24-hour ambulatory blood pressure monitoring (the gold standard for evaluating blood pressure), the extract group had a **3.6 mmHg** drop in **systolic blood pressure** compared to the placebo.^{3,17}

This level of reduction translates to a **7% lower** risk of major **cardiovascular events** like heart attacks and strokes.³

It is not, however, enough for most people with **hypertension** who seek to target blood pressure below 120/80. Achieving this target either requires lifestyle modifications such as diet management, aggressive weight loss (in overweight individuals) or use of a prescribed anti-hypertension drug(s).¹⁸





What You
Need
To Know

Metabolic Benefits

Blueberries may have immediate benefits for people with **metabolic syndrome**, a cluster of cardiovascular risk factors including high blood sugar, insulin resistance, and abnormal blood lipids.⁵

In a study, adults with metabolic syndrome were given a high-fat, high-sugar milkshake as a meal. The milkshake had 969 calories and was roughly equivalent to eating a large burger and fries and drinking a cola.⁵

Half the subjects received freeze-dried blueberry powder equal to **one cup of blueberries** with the milkshake, while the others received a placebo powder.

The blueberry group had a better metabolic response than the **placebo** group, including:

- Lower blood sugar three hours later (**77 mg/dL** vs. **92 mg/dL** for placebo), and
- Lower insulin three hours later (**3.4 µIU/mL** vs. **7.6 µIU/mL** for placebo).

Lower **insulin** blood levels indicate better glucose control in metabolic syndrome patients. Lower insulin indicate less cellular “insulin resistance.”

In this study, the blueberries offset some of the harmful metabolic effects of the high-fat/high-sugar milkshake.

Boost Health with Blueberry Extract

- **Blueberries** are rich in anthocyanins that help reduce inflammation, provide antioxidant defense, and interact with gut microbes to promote health.
- In clinical trials, blueberry intake boosts **brain function**, improves markers of **cardiovascular** health, and promotes **blood sugar** control.
- Additional research, including a human trial, suggests blueberries may help reduce age-related **bone loss**.
- Many forms of blueberry have shown health benefits. **Blueberry extracts** are particularly convenient and affordable.

In a longer trial, 52 older men with **type 2 diabetes** were given freeze-dried blueberries (equal to about a cup) or a placebo in a split dose with their usual morning and evening meals.¹⁹

After two months, the blueberry group had significantly lower **hemoglobin A1c** (a marker of blood sugar over two to three *months*) and **fructosamine** (which indicates blood sugar over the past two to three weeks).

In addition, the blueberry group had about **10% lower triglycerides** than the placebo group.¹⁹

Bolstering Bone Health

Preclinical studies indicate that blueberries could help support **bone health**.²⁰⁻²² This prompted scientists to conduct a human trial.⁷

Researchers recruited 13 healthy women without osteoporosis who were at least four years into **menopause**, past the most rapid phase of menopausal bone loss.⁷

At the start of the study, the women were given **calcium** with a “tracer” to help monitor bone breakdown.

Next, they took **wild blueberry** powder for **six weeks**, alternating with six-week periods of no treatment.

When the women took the blueberry powder daily (equal to about **2/3 cup** of whole blueberries), they retained **6% more calcium** in their bones, compared to no treatment.⁷

Taking daily blueberry extract can help provide a wide range of benefits that are instrumental to healthy aging.

Summary

Clinical trials show that blueberry interventions may improve **brain** function, **cardiovascular** health, and **metabolic** status, including blood **sugar** levels.

Research also suggests this superfruit could help protect **bone** health in aging.

Blueberry extract provides these benefits in a convenient, affordable form. ■

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Formulated with
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extracts to promote
satiety and encourage
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[†]This supplement should be taken in conjunction with a healthy diet and regular exercise program. Individual results are not guaranteed and results may vary.

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VERIFIED CUSTOMER REVIEW



Item #02504

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1. Gut Microbes. 2024 Jan-Dec;16(1):2338322. 2. Int J Food Sci Nutr. 2014 Dec;65(8):994-1002. 3. Lett Appl Microbiol. 2011 Jun;52(6):596-602.

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BY GERALD FELDEN

VITAMIN D

Reduces Symptoms of Depression

In recent years, a growing body of research has revealed a consistent pattern:

*Lower levels of **vitamin D** are strongly associated with an *increased* risk of developing symptoms of **depression**.*¹⁻⁴

This suggests that maintaining sufficient **vitamin D** levels may help reduce vulnerability to depression and perhaps other mood-related conditions.

Clinical trials have found that taking daily oral **vitamin D** may improve outcomes for people with mild to moderate **depression** and help **reduce** their **symptoms**.⁴⁻⁷

The Vitamin D-Depression Link

Depression is a mood disorder marked by persistent sadness, loss of interest in activities once enjoyed, and a range of emotional and physical symptoms. These may include changes in appetite or sleep, irritability, difficulty concentrating, fatigue, and feelings of guilt or worthlessness. When these symptoms persist and interfere with daily life, it's important to consult a health-care professional.^{8,9}

Depression is common.¹⁰ According to a **2023** national survey of U.S. adults, **29%**—nearly three in 10 adults—reported having been diagnosed with **depression** at some point in their lives.¹¹

Among the many contributing factors to depression, **vitamin D deficiency** stands out as both common and modifiable. Studies have found that individuals with depression often have notably lower levels of vitamin D.^{2,3,12,13}



Interestingly, symptoms of depression tend to rise during the winter months—when sunlight exposure, and therefore vitamin D synthesis, is at its lowest. This seasonal trend has been observed in both major depressive disorder and **seasonal affective disorder (SAD)**, further highlighting the potential role of vitamin D in mood regulation.¹⁴⁻¹⁶

How Vitamin D Affects Mood

The human brain has receptors for vitamin D just like nearly every tissue in the body.¹⁷

Preclinical and clinical evidence demonstrate that vitamin D is essential for a wide range of **brain functions**, including cognition, emotional regulation, and mood.¹⁸⁻²¹

All these functions support general **brain health** and help explain the link between low vitamin D levels and increased risk of depression.^{19,20,22}

Research has shown that vitamin D may help prevent depression or reduce its symptoms by:

- **Enhancing neuroplasticity** (the brain's ability to adapt and change).^{17,23}
- **Modulating neurotransmission and activating serotonin production.** Vitamin D may help spur serotonin synthesis, supporting healthy levels.^{17,24,25}
- **Maintaining circadian rhythms.** Abnormalities in the brain's biological clock have been tied to the risk of depression. Both clinical and preclinical evidence demonstrate that vitamin D contributes to the maintenance of healthy circadian rhythms.^{26,27}
- **Upregulating protective genes.** Vitamin D also supports brain health by upregulating the production of neurotrophic factors, which support neuron growth and survival such as **brain-derived neurotrophic factor (BDNF)**.^{28,29}
- **Reducing oxidative stress and neuro-inflammation.** Higher rates of oxidative stress and inflammation in the brain decrease neuroprotection and are associated with an increased risk of depression.^{1,17,30}



What You
Need
To Know

Vitamin D May Help Counter Depression

- Research has shown that lower levels of **vitamin D** are associated with a significantly higher risk of developing **depression**.
- Depression rates are highest in the **winter** when people are exposed to less sunlight, and vitamin D levels are typically at their lowest.
- **Clinical trials** have found that taking oral vitamin D may significantly reduce the risk of depression and the severity of depressive symptoms.

Fighting Depression in Human Studies

Multiple **clinical trials** have found that taking oral vitamin D can help prevent or reduce symptoms of depression—an effect that is highly likely to reflect a vitamin D deficiency or insufficiency.^{4-6,31}

A meta-analysis of 29 clinical studies involving over **4,500** people concluded that vitamin D intake could help reduce the incidence of depression and improve symptoms in those already experiencing it.

A daily supplemental dose of more than **2,800 IU**, and intervention durations longer than eight weeks were found to be particularly effective in both preventing and treating depression. The evidence for benefits was strongest in individuals who had low vitamin D levels below **20 ng/mL** (or below **50 nmol/L** when using another reporting method) for **25-hydroxyvitamin D**.⁶

A paper published in 2023, reviewing **10 meta-analyses** of clinical trials, found that those taking daily vitamin D had a significant reduction in **depression symptoms** compared to those taking a placebo. Four of the meta-analyses reported that individuals with low vitamin D levels had a **60%** greater risk of depression compared to those with *higher* levels of vitamin D. Most of these studies used daily doses between **1,500 IU** and **2,800 IU**.⁵

A clinical study published in **2024** added further insight. The researchers evaluated 46 people with major depressive disorder already receiving standard treatment and randomized to receive **1,600 IU** vitamin D or placebo daily. After seven months, both groups showed similar improvements in depression and anxiety symptoms.

Types of Vitamin D: D3, Calcifediol, Calcitriol—What's the Difference?

Not all vitamin D is created equal. There are three key forms, each suited to different needs. Here's a quick guide to help you understand your options:

- **D3 (Cholecalciferol)**³³
Everyday Maintenance/OTC

The most common over-the-counter form. It requires healthy liver and kidney function to become active. Ideal for general use and daily supplementation.

- **Calcifediol (25-hydroxyvitamin D3)**^{34,35}
Faster Acting / For Deficiencies/ Rx required

A prescription form that's already one-step activated. Useful for people with liver issues or those needing quicker results, as it skips the liver activation step.

- **Calcitriol (1,25-dihydroxyvitamin D3)**³³
Fully Active / Special Cases/Rx only

The final, fully active form. It's prescribed when both liver and kidney activation are compromised, such as in advanced kidney disease.

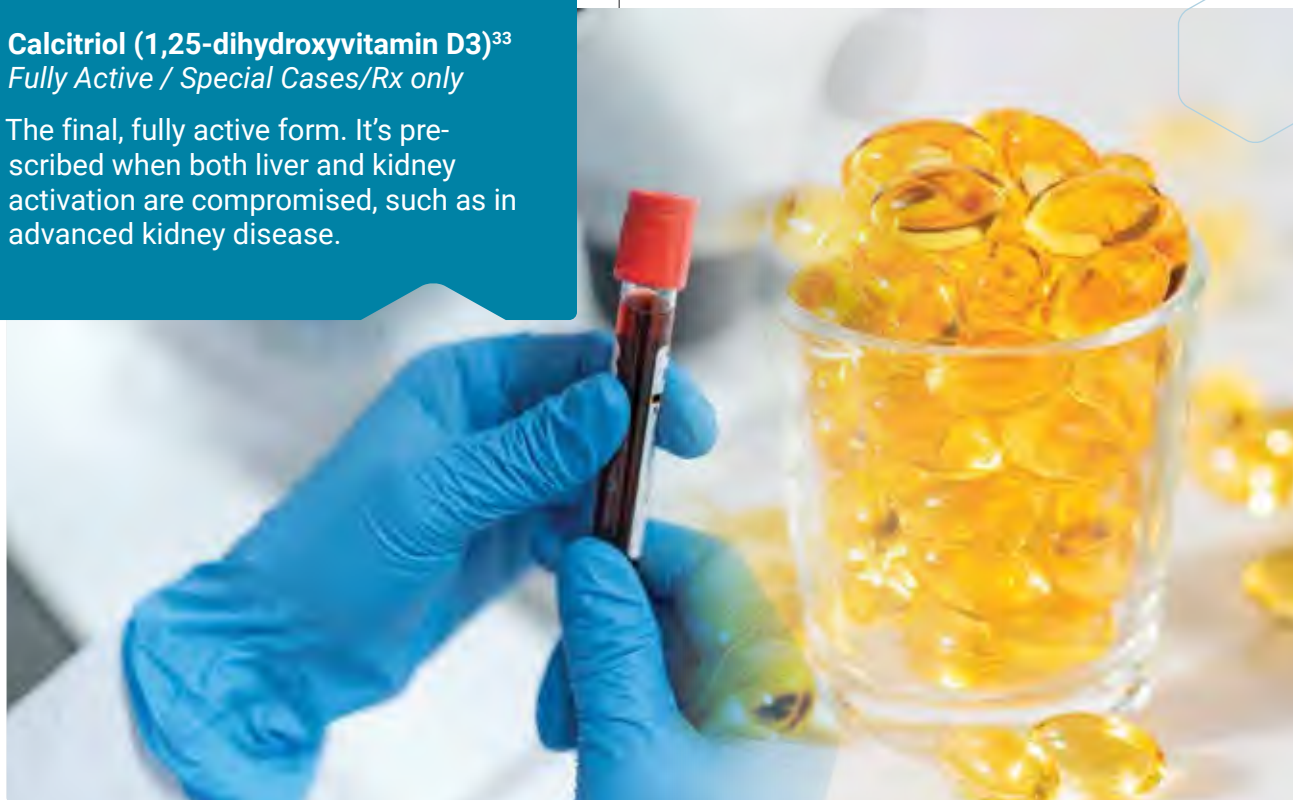
However, brain scans revealed that the vitamin D group maintained healthier brain connectivity and white matter integrity, while the placebo group showed disruptions. In the vitamin D group, more substantial increases in vitamin D levels were linked to greater symptom improvement.³² The dose used in that study (**1,600 IU**) was modest. Many individuals require between **5,000-8,000 IU (125-200 mcg) daily** to reach optimal blood levels.

Summary

In people with low levels of **vitamin D**, symptoms of **depression** are much more likely to occur.

Depressive symptoms are also often worse during **winter**, when days are shorter and vitamin D levels tend to be at their lowest.

Clinical trials have found that taking daily doses of oral vitamin D may help prevent or reduce symptoms of depression. ■



How Much Vitamin D Should You Take Daily?

Vitamin D is essential for many aspects of health. Blood levels of vitamin D can vary depending on your sun exposure, body weight, and skin tone. **Life Extension** recommends **50–80 ng/mL³⁶** for optimal health. Here's what to know about effective supplementation and how to monitor your levels:

- **Monitor Your Vitamin D Status Regularly**

Vitamin D is fat-soluble and stays in the body longer than water-soluble vitamins. Use the 25-hydroxyvitamin D blood test to monitor your vitamin D status. Your physician may test your vitamin D levels during your annual physical.

- **Deficient Levels vs. Optimal Levels**

- **Deficiency:** Less than **20 ng/mL**
- **Insufficiency:** **20–30 ng/mL**
- **Sufficiency:** Over **30 ng/mL**
- **Optimal** (per Life Extension): **50–80 ng/mL³⁶**

- **Typical Dosage Guidelines**

- Most people need **5,000–8,000 IU (125–200 mcg)** per day to reach optimal levels.³⁷
- People with **darker skin** may require more due to lower natural vitamin D production.³⁸
- Individuals with a high body mass index (BMI) require **higher doses** of vitamin D to achieve the same 25(OH)D concentrations as those with a normal BMI.³⁹



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Ingrid

VERIFIED CUSTOMER
REVIEW

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SITTING TOO LONG?



Item #02102

30 vegetarian capsules



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CAUTION: If you are taking anticoagulant or antiplatelet medications, or have a bleeding disorder, consult your healthcare provider before taking this product.

Pycnogenol® is a registered trademark of Horphag Research Ltd. Use of this product may be protected by one or more U.S. patents and other international patents. Supported by over 40 years of research.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

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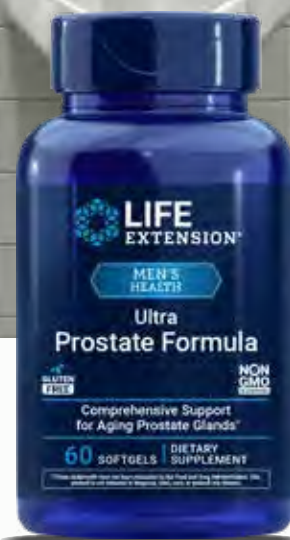
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Whole blueberries provide health-boosting benefits shown to:

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- **Maintain brain function**
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Blueberry Extract Capsules provide beneficial compounds found in fresh blueberries, helping to support whole-body health in a simple, convenient form.



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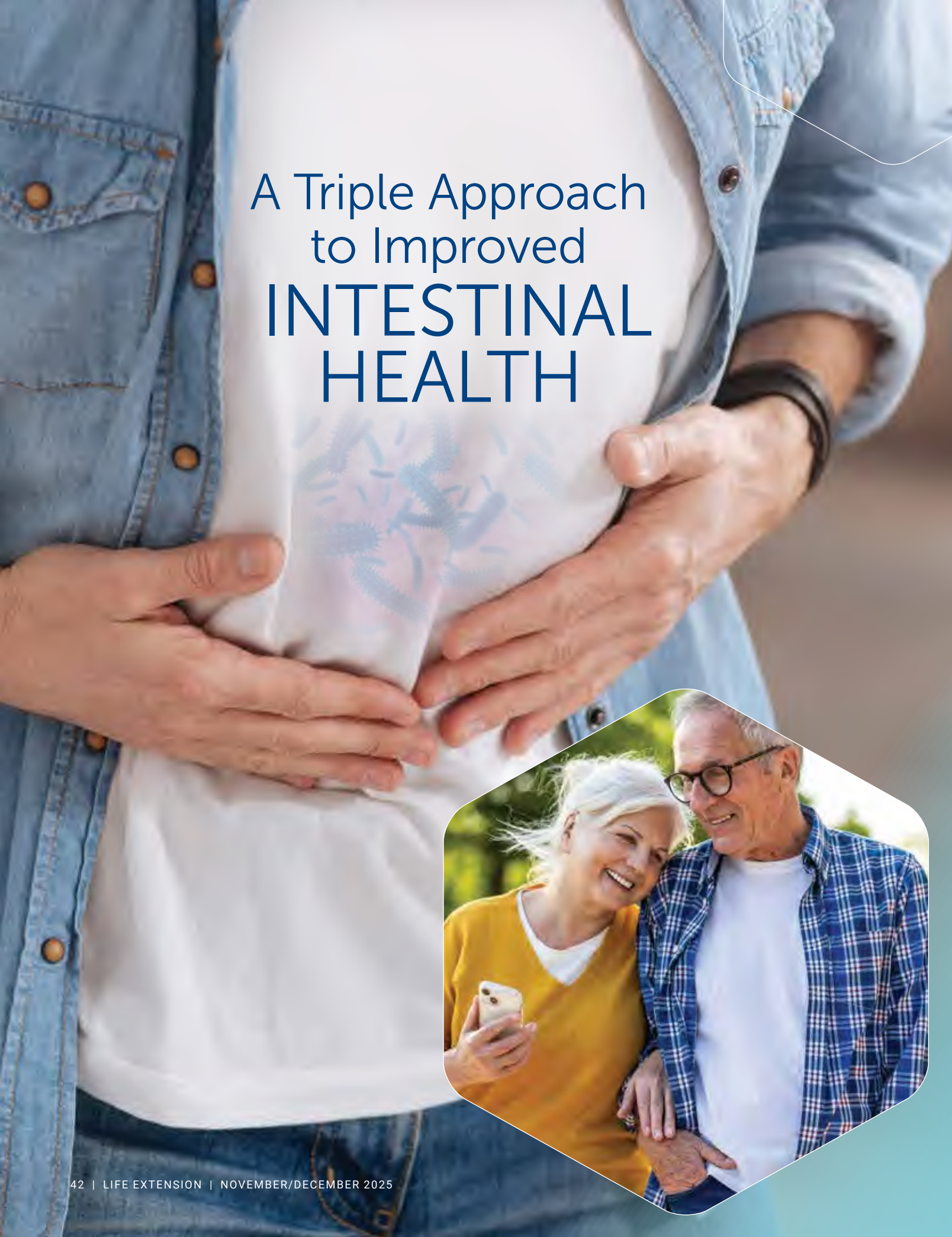


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"I am very pleased with the product."

Arline

VERIFIED CUSTOMER
REVIEW

The background of the page is a close-up photograph of a person's midsection. They are wearing a white t-shirt under a light blue denim shirt. Their hands are placed on their hips. Overlaid on the white t-shirt is a faint, stylized diagram of the human digestive system, showing the esophagus, stomach, small intestine, and large intestine in shades of blue and pink.

A Triple Approach to Improved INTESTINAL HEALTH





BY MICHAEL DOWNEY

The impact of the **microbiome** on gut health is well established.

An imbalance, marked by an increase in **harmful** gut microbes, can lead to gastrointestinal **discomfort**, including abdominal **pain**, **diarrhea**, and **bloating**.^{1,2}

Probiotics are a well-established way to introduce beneficial gut bacteria.³

Some probiotics, however, struggle to compete with aggressive microbes.

An improved approach involves adding **bacteriophages** or **phages**, selected to safely target and eliminate *specific harmful bacteria*, allowing **beneficial microbes** to flourish.^{4,5}

As a new way to improve the **microbiome**, researchers have focused on **postbiotics** which, in specific cases and strains, may offer comparable benefits to probiotics along with improved stability.^{6,7}

In a recent **human** study, one specific **postbiotic** significantly reduced **abdominal pain** in an astonishing **88%** of subjects and reduced days with **diarrhea** by **65%**.⁸

Scientists have developed a unique combination of two **probiotics**, four **phages**, and a novel **postbiotic**, all shown to alleviate gastrointestinal discomfort and promote digestive health in individual clinical studies.

Dysbiosis and Intestinal Health

Many people have **dysbiosis**, a microbiome imbalance that can contribute to **stomach distress**. This condition tends to worsen with age.⁹

A survey of 71,000 people found that over **60%** of Americans suffer from one or more **gastrointestinal symptoms** weekly, including:¹⁰

- Abdominal **pain**,
- Abdominal **bloating**,
- **Diarrhea**, and
- **Constipation**.

Microbiome imbalance is also linked to **irritable bowel syndrome**,¹² colon infections,^{11,12} autoimmune disease,^{13,14} allergies,^{14,15} and obesity.^{12,14,15}

Improving the microbiome by shifting it away from dysbiosis and towards a healthy profile can reduce **gastrointestinal symptoms and disease risk**.^{11,12,16}

Probiotics Restore Beneficial Bacteria

Probiotics are live bacteria that can improve the microbiome.

In preclinical studies, two strains of ***Lactobacillus probiotics***, ***L. paracasei IMC502*** and ***L. rhamnosus IMC501***, provide antimicrobial effects against:^{17,18}

- **Candida**, a fungus that can cause health issues when it overgrows,
- ***S. aureus***, a bacterium that triggers diarrhea and abdominal cramps, and
- ***E. coli***, a common cause of diarrhea and other digestive problems.

In two randomized **clinical trials**, a blend of these probiotic strains was shown to improve intestinal regularity and **bowel habits**.^{19,20}

The gut is a complex place, and offering probiotics for extra support could be key to dealing with the more aggressive microbes that create dysbiosis in the first place.

A more comprehensive approach involves using probiotics *with* another therapy, one that **selectively targets** and reduces the dangerous bacteria taking over the microbiome.²¹

This is where **phages** come into play.

Phages Support Probiotics

The word **bacteriophage** (phage for short) means “bacteria eater.”

Phages are tiny packages of DNA or RNA, enclosed in a protein envelope, that actively seek out and kill specific bacteria—and *only* those bacteria.

Different phage strains target different bacteria. They pose no harm to any other life form, including humans.

By selectively destroying potentially harmful bacteria, **phages** may allow **probiotics** to more effectively restore *beneficial* bacteria.²² This may help return the microbiome to a healthy state.²¹

Scientists identified **four phages** that help decrease intestinal populations of undesirable bacteria. They are:²³

- **LH01-Myoviridae**,
- **LL5-Siphoviridae**,
- **T4D-Myoviridae**, and
- **LL12-Myoviridae**.





What You
Need
To Know

A Blend for Digestive Health

- Harmful microbes have been associated with **gastrointestinal symptoms** like diarrhea, bloating, and stomach pain.
- The probiotics ***L. paracasei* IMC502** and ***L. rhamnosus* IMC501** reduced harmful bacteria in preclinical studies, while demonstrating improved bowel habits in clinical trials.
- Adding bacteria-killing **phages** may enhance probiotics' effectiveness and restore a more balanced microbiome.
- In a clinical study, the heat-treated **postbiotic *B. longum* ES1** improved symptoms in adults with irritable bowel syndrome, reducing abdominal pain in **88%** of subjects and reducing days with diarrhea by **65%**.
- Researchers have combined this **post-biotic** with two **probiotics** and four **phages**, all shown in separate clinical trials to be effective against gastrointestinal symptoms, for optimal digestive health.

In a randomized clinical trial of 32 healthy adults with self-reported gastrointestinal issues, after 28 days, participants who took a **blend** of these phages, compared to a placebo, had:²³

- *Increases* in **beneficial bacteria** in the gut,
- *Decreases* in harmful ***E. coli*** bacteria, and
- *Decreases* in interleukin-4, a marker of **inflammation**, compared to baseline.

Postbiotics Deliver Superior Benefits

Probiotics are live microorganisms.

Postbiotics are their non-living versions that may contain intact inanimate cells, or their components or metabolites.

Postbiotics are deactivated, usually by **heat treatment**. However, in specific strains, they can confer benefits similar to their live *probiotic* counterparts: modulating the microbiome, promoting gut barrier function, and regulating inflammation.^{6,7}

Postbiotics offer key advantages over probiotics, such as easier standardization, and suitability for vulnerable groups. Unlike probiotics, they do not require live cultures to be effective, eliminating storage and stability concerns.^{7,24}

Scientists identified a specific **postbiotic** strain, heat-treated ***Bifidobacterium longum* ES1**, that improves **gastrointestinal** symptoms.

To evaluate this postbiotic, researchers conducted a **randomized, double-blind, placebo-controlled** trial involving 200 adults with moderate to severe diarrhea-predominant IBS. Participants were randomly assigned to one of three groups:

- Live ***B. longum* ES1** (*probiotic*),
- Heat-treated ***B. longum* ES1** (*postbiotic*), or
- Placebo.

Participants who took **heat-treated *B. longum* ES1** daily for 84 days had remarkable improvements, including:⁸

- **Reduced symptom severity.** A remarkable **85%** of the **postbiotic** group had a significant reduction in IBS symptom severity. The mean severity decreased from “moderate-severe” to “mild,” and **17%** fell from “severe” to **symptom-free**.
- **Reduced stomach pain.** An extraordinary **88%** of postbiotic users had a reduction of over **30%** in **abdominal pain** severity.
- **Fewer days with diarrhea.** In the postbiotic group, days with loose or watery stools decreased **65%**, from **5.87** to **2.06** days weekly. Subjects reported more normal stool types, but *without* a shift towards constipation.
- **Improved quality of life.** Quality of life impacted by IBS improved by about **30%**, as measured by a questionnaire that assesses interference with activity, food avoidance, social reaction, sexual and relationship issues, and other areas.

Compared to *live* probiotics, **postbiotics** demonstrate greater stability and longer shelf life.⁸

Evidence from preclinical studies suggests that **heat-treated *B. longum* ES1** may deliver these benefits by enhancing immune modulation and gut barrier function.²⁵⁻²⁸

Researchers have combined two probiotics, four phages, and this powerful **postbiotic** into an innovative formula for improved gastrointestinal health.



Probiotics, Phages, and Postbiotics: What's the Difference?

- **Probiotics** are **live** beneficial microorganisms, such as certain bacteria and yeast. Different strains have different health benefits.³
- **Phages** (short for bacteriophages) are non-living packages of DNA or RNA, enclosed in a protein envelope, that target and kill specific bacteria. Different phage strains target different bacteria.^{4,5}
- **Postbiotics** are **non-living** (heat-treated) probiotics or their cellular components or metabolites that provide health benefits. Although not alive, these bioactive compounds still improve your gut's bacteria population and confer health benefits.^{6,7}

Summary

Probiotics help introduce beneficial gut bacteria, improving **gastrointestinal symptoms** and potentially reducing disease risk.

The effectiveness of probiotics may be enhanced by the addition of **phages**—targeted DNA or RNA packets that safely eliminate specific harmful bacteria.

Scientists are now boosting results even further by adding **postbiotics**, which are inactivated microbes or their cellular components or metabolites.

In a clinical trial, the postbiotic ***B. longum* ES1** reduced **abdominal pain** in **88%** of IBS patients and improved quality of life by **30%**.

Together, these ingredients can help reduce unpleasant gastrointestinal issues and promote digestive health. ■

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1
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GMO
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Mega Vitamin K2*

45 mg

Item #02417

30 capsules



Strong bones and a healthy heart are two benefits of adding **vitamin K** to your routine. This essential vitamin helps maintain your body's calcium balance and, in turn, supports everything from your **arterial health** to healthy **bone density**.

Fortunately, you can ensure you're getting enough of this important nutrient by supplementing with exactly as much—or as little—vitamin K as you need.

These products are available at fine health food stores everywhere.

* **CAUTION:** If you are taking a vitamin K antagonist (e.g. warfarin), consult your healthcare practitioner before taking a vitamin K supplement.

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

Fuller, Stronger Hair

NEW



Item #02541

30 softgels

“Mane-taining” healthy, full,
beautiful hair just got easier!

Our new supplement for women promotes hair health, density and volume with phytoceramide and saw palmetto extracts. It also helps reduce shedding and maintain already-normal levels of DHT, a hormone linked to hair follicle health.

Show your hair some love with Hair Growth for Women.

This product is available at fine health food stores everywhere.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

HIGHLY ABSORBABLE ASTAXANTHIN

Supports Whole-Body Health

ASTAXANTHIN is a carotenoid that benefits the eyes, immune system and cognitive functions. Research suggests that astaxanthin can play a role in promoting cardiovascular health.¹⁻⁴

Found naturally in seafood and algae, as little as **50%** of **astaxanthin** is normally **absorbed** in the blood-stream.⁵

Life Extension combines **4 mg** of **astaxanthin** with a blend of four different **phospholipids**, which has been shown to enhance carotenoid **absorption**.⁵

References

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This product is available at fine health food stores everywhere.



Item #01923

30 softgels



"I love this supplement for all benefits that it gives you."

Maria

VERIFIED CUSTOMER
REVIEW

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

CoQ10

When Your Energy Matters Most

Help your hard-working organs produce the energy they need to thrive.

Super Ubiquinol provides a highly *absorbable* form of **CoQ10** to promote heart health and healthy cellular energy production.

"Super product!"

Richard

VERIFIED CUSTOMER
REVIEW



CoQ10 formula

Item #01426

100 mg • 60 softgels



Our maximum dose ubiquinol

Item #01431

200 mg • 30 softgels



Supercharged heart health & general fatigue fighter

Item #01733

100 mg • 30 softgels

These products are available at fine health food stores everywhere.



These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.



Mango Tree Bark





Reclaim Your VITALITY

BY MARSHA MCCULLOCH, MS, RD



East Indian
globe thistle
(*Sphaeranthus
indicus*)

A **2025** systematic review and meta-analysis found that around **43%** of older adults experience low **energy levels** and **58%** report a high degree of perceived physical and mental **fatigability**.¹

In other words, diminished **vitality**.

Vitality is what keeps a person feeling **energetic** and ready to embrace life each day.²

Several lifestyle factors promote vitality, including good sleep, healthy nutrition, and regular physical activity, which helps maintain **muscle strength**.²⁻⁴

Scientists searched the plant world for a way to enhance traditional methods of supporting energy and physical function.

After a rigorous investigation, they combined two **plant extracts** to promote muscle **strength** and **vitality**.⁵

In a **clinical trial** of aging men and women, those taking this **extract blend**, compared to **placebo**, had **4.5** times greater improvement in **hand grip** strength, boosted **walking distance** by **86%**, and improved feelings of **vitality** twice as much as exercise alone.⁵

Understanding Vitality

Vitality, feeling energetic and full of life, is crucial for healthy aging and longevity.³ It makes it easier to maintain **independence** and enjoy daily activities as we **age**.^{2,3}

Vitality is reflected in our **energy levels**, **muscle strength**, and **immune responses**, among other factors.³

Resistance training, a crucial component to improved **vitality**,⁶ is one of the best ways to support muscle mass and strength as we age. Exercising the **legs** is particularly key since they are essential for maintaining mobility, balance, and walking patterns.^{7,8}

Another vitality factor, particularly for men, is promoting youthful levels of testosterone, a hormone that helps maintain muscle mass and function.^{9,10}

Scientists suspected the plant world could help with these and other aspects of vitality.

Rediscovering Ancient Rejuvenating Herbs

Ayurveda botanical medicine is known for its rejuvenating effects¹¹ and is associated with youthfulness, a strong body, and long life.¹²

Ayurvedic therapies commonly target factors that drive the aging process, including **inflammation**, declining **immune** function, and **mitochondrial** dysfunction.¹²

To support youthful aging, scientists screened many Ayurvedic botanicals to formulate a vitality blend.



First, they selected **East Indian globe thistle** (*Sphaeranthus indicus*), traditionally used for its rejuvenating properties.^{13,14}

Globe thistle flower is rich in compounds shown in preclinical research to have anti-inflammatory and immune-supportive properties.^{15,16}

Next, after an extensive search, they formulated an extract from the bark of the mango tree (*Mangifera indica*).

Mango tree bark is rich in mangiferin, a compound shown in preclinical research to support cellular energy production and the creation of mitochondria.^{17,18} Mitochondria generate energy needed for bodily processes including muscle contraction.^{19,20}

Mangiferin is also a potent anti-inflammatory and immune-supportive compound.²¹

Improving Vitality

Scientists tested an **East Indian globe thistle flower + mango tree bark** extract blend in 92 healthy, physically active **adults** aged **55 to 70** years.⁵

Subjects took either **650 mg** of the **extract blend** or a **placebo** every morning after breakfast.

All participants completed a home **strength training** program using resistance bands three days a week throughout the study.

This trial assessed aspects of **vitality** including perceptions of vitality and energy as well as physical components of **vitality** such as muscle strength and endurance.

A standard **quality-of-life** questionnaire was used to assess perceptions of vitality. Overall, the **dual-extract** supplemented group had twice the **improvement in** perceived **vitality** and **energy** compared to the **placebo** arm.⁵

In addition, change from baseline in total **testosterone** levels was **2.6** times *greater* in **men** (but not in women) treated with the extract blend compared to the placebo group. **Free testosterone** (the active form) increased **4.3** times more from baseline in the treatment group than in the placebo group.⁵

Testosterone plays a crucial role in maintaining **muscle mass** and sexual function in men.²²⁻²⁴ Men typically experience a reduction in testosterone levels starting around age 35.²⁵

Testosterone levels did not change in female subjects in the study, which means hormone-related side effects were not an issue in women.



What You
Need
To Know

Stay Strong and Energetic

Boosting Strength and Endurance

Within just **four weeks**, measures of muscle **endurance** and **muscle** and **handgrip strength** significantly improved in the extract group compared to placebo.⁵

After 12 weeks, compared to **placebo**, those taking the **extract blend** had:⁵

- **51%** greater resistance to **muscle fatigue**,
- **86%** greater improvement in **walking speed**,
- **4.2 times** greater improvement in **leg strength**, and
- **4.5 times** greater improvement in **handgrip strength**.

Handgrip strength is a good indicator of overall **muscle strength** and quality of life in older adults.^{26,27} It is one of several tests that are used to measure **biological age**.²⁸

Overall tolerance of the extract blend was good and without side effects.⁵

This blend can safely help maintain vigor and vitality in older age.

- **Vitality**, or feeling lively and energetic, declines with age. That can erode independence and quality of life.
- Maintaining muscle **strength** and endurance is key to preserving vitality. Regular exercise, including resistance training, can help, but may not be enough on its own.
- To promote vitality, scientists searched for and developed a combination of extracts from **East Indian globe thistle flower** and **mango tree bark**.
- In a clinical trial, oral intake of the extract blend plus resistance exercise resulted in **4.2 times** more **leg strength** and **twice** the improvement in feelings of energy and **vitality** compared to exercise alone.
- The extract blend also improved functional fitness, boosting **walking speed** by **86%** compared to placebo, which could facilitate the completion of everyday tasks and activities.

Summary

Vitality or zest for life can dwindle as we age.

Researchers combined **East Indian globe thistle flower** and **mango tree bark** extracts to help restore vitality.

In a clinical trial, daily oral intake of the extract blend significantly improved feelings of **vitality** and **energy**, **muscle strength**, **endurance**, and **walking speed** in aging adults.

The extracts worked quickly, producing improvements in strength and endurance within **four weeks**. ■

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Is Your Body in Sync?



The health benefits of **Curcumin Elite™ Turmeric Extract** and **Pro-Resolving Mediators** stand on their own. Taken together? You have an elegant pairing for whole-body health on your hands!

First, curcumin helps promote a healthy inflammatory response. Next, Pro-Resolving Mediators promotes a healthy post-inflammatory response by helping your body remove cellular debris for healthy tissue to flourish.

It's the perfect complementary combo!



**Curcumin Elite™
Turmeric Extract**

Item #02407

60 500 mg vegetarian capsules



**Pro-Resolving
Mediators**

Item #02223

30 softgels

These products are available at fine health food stores everywhere.



These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

Manage Stress



OPTIMIZED Ashwagandha EXTRACT

Ashwagandha has been shown to:

- Support a healthy response to everyday stress
- Promote emotional well-being
- Encourage already-healthy levels of cortisol, the stress hormone

Optimized Ashwagandha provides **standardized** leaf and root **extracts** at a low cost.



Item #00888

60 vegetarian capsules



This product is available at fine health food stores everywhere.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

COMBAT BELLY FAT WITH AMPK

Studies show that *increasing AMPK* activity encourages cells to stop storing fat and start *burning* it for energy. So we've created AMPK Metabolic Activator to help trigger AMPK, causing the body to burn unwanted fat—particularly around your abdomen.



Item #02207

30 vegetarian tablets

"Oh, I love this! I noticed my pants are looser and I can fit in my skinny jeans."

Adela

VERIFIED CUSTOMER REVIEW

This product is available at fine health food stores everywhere.

This supplement should be taken in conjunction with a healthy diet and regular exercise program. Individual results are not guaranteed, and results may vary.



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Vitamin D
+ Vitamin K
+ Sea Iodine
= Convenience
+ Cost Savings



Item #02040

60 capsules



Vitamins D and K as well as iodine perform multiple functions for heart and bone health.

Life Extension brings these three nutrients together in one convenient capsule.

Just one capsule daily provides:

Vitamin D3	125 mcg (5,000 IU)
Vitamin K1	1,000 mcg
Vitamin K2 (MK4)	1,000 mcg
Vitamin K2 (MK7)	100 mcg
Iodine	1,000 mcg

This product is available at fine health food stores everywhere.

CAUTION: Individuals consuming more than 50 mcg 2,000 IU/day of vitamin D (from diet and supplements) should periodically obtain a serum 25-hydroxy vitamin D measurement. Do not exceed 250 mcg per day unless recommended by your doctor. Vitamin D supplementation is not recommended for individuals with high blood calcium levels. If you have a thyroid condition or are taking antithyroid medications, do not use without consulting your healthcare practitioner. If you are taking a vitamin K antagonist (e.g. warfarin), consult your healthcare practitioner before taking this product.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

HEALTHY AGING Amino Acid



L-ergothioneine, an amino acid found in **mushrooms**, is delivered directly to our cells and mitochondria

Mega L-Ergothioneine provides a powerful dose of highly bioavailable¹ **L-ergothioneine** and may support healthy aging by:

- Promoting plasma ergothioneine levels¹
- Providing sustained ergothioneine levels¹ with **high bioavailability** and efficient absorption
- Supporting overall well-being²
- Offering cellular protection against oxidative stress^{1,3}

Just one daily vegetarian capsule of **Mega L-Ergothioneine** provides a full **25 mg** of **L-ergothioneine**.

This new strength provides **25 mg** of **L-ergothioneine** per capsule, which is equivalent to the amount found in approximately **10 to 23** cups of white button mushrooms.³⁻⁵



Item #02540

30 vegetarian capsules

This product is available at fine health food stores everywhere.

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Astaxanthin and Your BRAIN

BY BRIAN THOMPSON

Vegetable **carotenoids** are known to provide systemic benefits, including helping to maintain ocular and cardiovascular functions.¹

But one carotenoid has a unique structure that sets it apart: **astaxanthin**.

Preclinical data has shown that astaxanthin can promote **brain health**.²⁻⁴

Clinical research suggests that astaxanthin's **neuroprotective** properties may help reduce **dementia** risk factors.⁴⁻⁶

In human studies, taking astaxanthin daily led to significant improvements in cognition, including tests of **memory** and **learning**.^{4,7}

What Is Astaxanthin?

Astaxanthin is a red pigment in the **carotenoid** family, which also includes lutein, zeaxanthin, and lycopene.⁸

It is produced by **microalgae** and **phytoplankton** in the ocean.⁸

The pinkish-red color of shrimp, lobsters, crabs, and salmon is due to their astaxanthin-rich diet. Even pink flamingos' color comes from the astaxanthin in the crustaceans they eat.⁸

As evidence mounts about its multiple biological properties, it is being included in more nutritional regimens designed to counteract degenerative aging processes.

What Makes Astaxanthin Unique?

Astaxanthin's unique structure makes it **one of the most powerful antioxidants known**.⁹

Its exceptional structure allows it to **penetrate** deep within **cell membranes**. It blends well with cell membrane fats and remains **stable** in its form. This makes astaxanthin highly effective at neutralizing harmful free radicals.⁹

Oxidative damage to cell membranes is a driver of many degenerative disorders including the development of **Alzheimer's**.¹⁰

Protecting the Brain

Myelin is a protective covering on **nerve fibers** that helps brain signals to be properly transmitted. Damage to the myelin sheath is related to neurodegenerative diseases.¹¹

Astaxanthin's ability to wedge itself into these cell membranes provides strong protection against myelin damage. *Few other antioxidants* defend cell membranes in this particular way.

Preclinical studies have shown that astaxanthin has potent **anti-inflammatory** and **neuroprotective** properties that may contribute to protection against brain-related disorders,¹² as well as potential brain benefits including adult neurogenesis (formation of new brain cells).¹³

In preclinical studies, it has even helped prevent the accumulation of **beta-amyloid plaques**. These abnormalities in the brain are associated with the development of Alzheimer's.^{2,14,15}

Preclinical studies suggest that astaxanthin may offer neuroprotective benefits, as it can cross the blood-brain barrier when taken orally—an ability that sets it apart from many other compounds.¹³

Diverse Brain Benefits

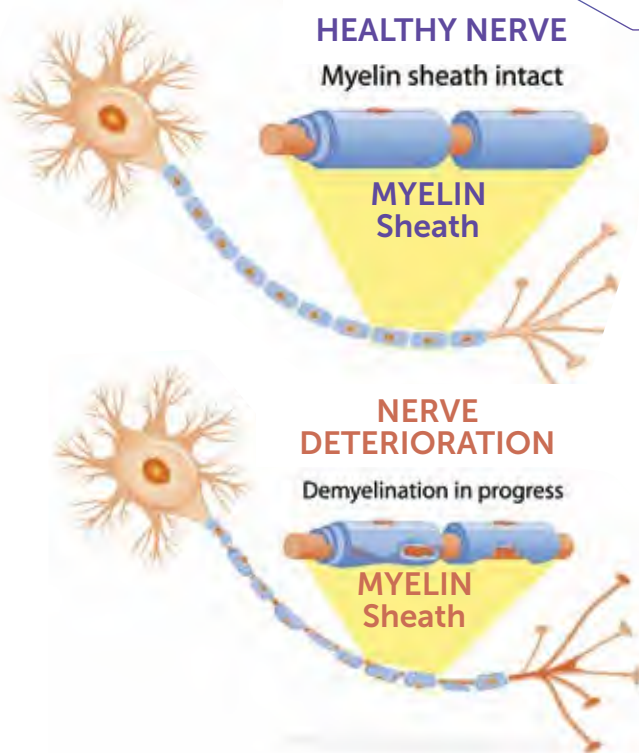
Astaxanthin has been studied in many cell and animal models of neurological conditions.

In mouse models of **Alzheimer's disease**, astaxanthin *prevented* accumulation of toxic **beta-amyloid** and **tau** proteins in the brain and *reduced* inflammation and oxidative stress. These effects led to improvements in **cognitive function**.^{14,15}

In mouse models of **vascular dementia**, a common form of dementia that occurs due to reduced blood supply to the brain, astaxanthin *prevented neuron cell death*, resulting in improved cognitive function and motor behavior.^{16,17}

Astaxanthin also could protect against general **brain aging**. A model of accelerated aging in mice typically leads to rapid cognitive decline and neurodegenerative disease. Astaxanthin intake significantly *delayed* brain aging and decline in brain function.¹⁸

Brain Neurons





ASTAXANTHIN

What You
Need
To Know

Support Cognitive Function

- **Astaxanthin** is a red-pigmented carotenoid and powerful antioxidant formed primarily in microalgae.
- Its ability to cross the blood-brain barrier and to be inserted into cellular membranes makes it particularly beneficial in the brain, where it can protect against **oxidative damage**.
- Preclinical studies show that astaxanthin defends **brain health** and protects against loss of cognitive function.
- Human trials of astaxanthin show that it can boost **cognitive function** and reduce markers of dementia.



Researchers found that some of this anti-aging effect could be attributed to enhanced **autophagy** in the brain,¹⁸ “cellular housekeeping” that rejuvenates cells and helps maintain healthy function.

Preclinical studies have shown that **astaxanthin** benefits the **brain** in a wide range of additional ways, including by:⁴

- Improving blood flow,
- Reducing neuroinflammation,
- Increasing brain antioxidant capacity,
- Improving mitochondrial function,
- Preventing brain cell death, and
- Inhibiting abnormal protein accumulation.

Insights from Human Studies

Human studies of astaxanthin have demonstrated protective potential.

One study showed that astaxanthin lowered levels of oxidative stress in the form of **phospholipid hydroperoxides**. These compounds reach abnormal concentrations in the red blood cells of dementia patients. Taking astaxanthin reduced levels of these hydroperoxides in the red blood cells of middle-aged and **elderly adults** compared to placebo.¹⁹

A **clinical trial** in adults has shown that taking astaxanthin significantly improves **cognitive function** after eight weeks of supplementation.²⁰

Other aspects of health have also been explored in separate clinical trials. In one study, a daily dose of **12 mg** of astaxanthin was shown to reduce **fatigue**²¹ while another trial reported improvements in mood, including reductions in depression.²²

Astaxanthin is emerging as a valuable nutrient to promote optimal brain health into older age.

Summary

Astaxanthin is a carotenoid produced by certain microalgae. The body inserts it into **cellular membranes**, where it protects against oxidation.

In animal and cell studies, astaxanthin exhibits neuroprotective activity that may guard against neurodegenerative disease, including **Alzheimer's disease**.

Human trials show astaxanthin can boost **cognitive function** and reduce markers of dementia. ■

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Don't Let **PMS** **Cramp** Your **Style**

Want to feel comfortable during that time of the month? This new everyday supplement helps reduce PMS-related discomforts.

- In a clinical study, taking 200 mg of the ginger extract in this formula resulted in an average reduction of 84% in menstrual cramp discomfort scores.
- The ginger extract also eased period-related nausea and decreased fatigue and lower back discomfort.
- We included magnesium glycinate and vitamin B6 for their benefits to mood and well-being.

**Stay your fabulous self all month long
with Daily PMS Relief.**



Item #02537

60 vegetarian capsules

This product is available at fine health food stores everywhere.

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For healthier aging...

Restore Youthful Vitality

NEW



Item #02545

30 vegetarian capsules

In a clinical trial, two plant extracts boosted multiple factors of **vitality and strength** when used with a regular exercise program.*

The Active Vitality & Strength formula

provides these two standardized plant extracts
(East Indian globe thistle flower + mango tree bark)
in one daily capsule to:

- Encourage vitality and overall health
- Promote quality of life
- Support muscle health and strength
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* Kumar JP. A randomized, double-blind, placebo-controlled study to evaluate the benefit of LI12542F6 supplementation in conjunction with an exercise program to enhance muscle strength in healthy aging subjects. Internal Study Report. 2023.

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Reishi

SUPPORTS
A HEALTHY
IMMUNE
SYSTEM

Reishi mushroom has been used for centuries. Now, get the benefits of **reishi** in a scientifically studied extract form.¹

Reishi mushroom has been traditionally used to support immune system vitality.¹⁻³

Animal and lab studies show that Reishi promotes numerous immune cell activities.³⁻⁶

The suggested **2 capsules** a day of Reishi Extract Mushroom Complex provide:

Reishi mushroom **980 mg**
(*Ganoderma lucidium*) extract
(Fruit body) [standardized
to **13.5%** polysaccharides and
6% triterpenes]

Shell-broken Reishi mushroom **150 mg**
(*Ganoderma lucidium*) spore



Item #01708

60 vegetarian capsules



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This product is available at
fine health food stores everywhere.

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Improving Brain Aging with Senolytics

BY STEPHEN RANDALL



The **immune system** has a well-known role in protecting us from infections and cancer.¹

In a major article published in the journal *Neuron* in 2025, scientists from the Department of Brain Sciences at Israel's Weizmann Institute of Science have proposed that **brain health** is more closely influenced by the **immune** system than had previously been known.²

In short, they explain that brain fitness depends on immune fitness.

This means **aging** of the **immune** system leads to **brain aging**, and that *rejuvenating* the immune system may help revitalize brain function.

One way researchers believe it might be possible to rejuvenate immune and brain health is with **senolytics**.

Preclinical studies indicate that these compounds may help eliminate dysfunctional **senescent cells**, which contribute to many problems associated with the aging immune system^{3,4} and the **brain**.^{5,6}



How Senescence Harms the Brain

As cells age and accumulate damage, they can become **senescent**. These cells no longer function properly and fail to die off to make room for healthy new cells.⁷

Senescent cells can also produce a slew of **pro-inflammatory compounds** that circulate in the blood, potentially driving disease and harming brain health.⁷

Many of these **pro-inflammatory** compounds originate in **immune cells**. Elevated levels cause **neuro-inflammation** and rapid aging in the brain. They are associated with an increased risk of **cognitive impairment** and **dementia**.²

In addition, neurons, **microglia** (the brain's immune cells), and other cells in the brain can all become **senescent** themselves.^{2,6,8,9} In mice, the accumulation of **senescent microglia** in the aged brain correlates with cognitive decline and neuroinflammation.^{6,9}

Restoring Immune and Brain Health

Studies in preclinical models show that restoring a more youthful immune system **improves brain function**.

In animal experiments, transfusing young healthy mice with the **blood of elderly mice** causes their brain function to deteriorate, leading to impairment in cognitive functions like learning and memory.¹⁰⁻¹³

Conversely, transfusing young, healthy blood plasma into aged mice leads to improvements in **neurogenesis** (the production of new brain cells), **synaptic plasticity** (the ability of synapses to adapt to stimuli), and **cognitive function**.¹⁴

As bone marrow cells age, they secrete a protein called **cyclophilin A**, which contributes to cognitive decline. *Blocking* this protein in elderly mice increases vital synaptic proteins, supports brain cell growth, and improves cognitive function.¹⁵

In mouse models, **rejuvenating** the immune system by transplanting *young bone marrow* protects older animals against **cognitive decline** and neuroinflammation.¹⁶ (We cannot do this safely in humans yet because of graft-versus-host risk.)

How Senolytics Can Help

The Israeli scientists who published the **2025** article note that increasing **exercise** and improving **diet** can help boost immune function, reduce inflammation, and protect cognitive function.²

One promising additional intervention that is already in clinical trials is **senolytic therapy**.

Plant-Derived Senolytics

One of the first effective senolytic treatments used a plant-derived polyphenol called **quercetin**.¹⁸

Even greater senolytic effects were found when combining quercetin with the cancer drug dasatinib.¹⁹ Quercetin and dasatinib target different senolytic activating factors in senescent cells.²⁰ Dasatinib, however, can cause side effects.²¹

Recent research has identified the potential of **theaflavins**, polyphenols from black tea, to mitigate cellular senescence and delay the onset of age-related diseases.²²⁻²⁵ In mouse models, theaflavins have been shown to inhibit cellular senescence.²⁶

Fisetin, another plant polyphenol was found to be the most potent plant-derived senolytic in a study of 10 flavonoids.²⁷ It has been shown to be neuroprotective in animal models of Alzheimer's²⁸ and Parkinson's disease^{29,30} and has increased lifespan^{27,31} in animal models.

These senolytics may help eliminate senescent cells' burden.

Apigenin, a polyphenol found in plants like chamomile and parsley, has been found in preclinical models to reduce the pro-inflammatory compounds produced by senescent cells.^{32,33}

A combination of these four plant-derived compounds could help reduce senescent cells and the damage they do.



Senolytics help eliminate senescent cells, including in the brain and immune system.⁵

Studies have shown that reducing **senescent cell** numbers leads to improvements in brain function in preclinical models of brain aging and cognitive decline.^{6,9,17}

For example, giving mice a combination of two senolytics, **quercetin** (a plant-derived polyphenol) and **dasatinib** (a cancer drug), reduced the number of senescent microglial cells in the brain. This reduced the pro-inflammatory environment and **improved cognitive function**.⁶

In another study in mice, clearing senescent cells protected cognitive function from deterioration.³

Several **human trials** of senolytic therapy are currently underway in patients with Alzheimer's disease and mild cognitive impairment.²

Summary

A recent article in the scientific journal *Neuron* reports that an age-related decline in **immune** function helps drive the development of cognitive decline and **dementia**.

Many of these changes are caused, in part, by **cellular senescence** in the immune system, bone marrow, and brain.

Senolytic compounds remove harmful senescent cells, including immune *and* brain cells, potentially decreasing neuroinflammation and protecting the brain from age-related deterioration. •

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REVIEW



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It provides nutrients to support your prostate and bladder, and melatonin encourages healthy sleep patterns.

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Enjoy your dreams without interruptions. Try Men's Bladder Support today.



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* Glob Adv Health Med. 2020 Nov 27;9:2164956120973639.

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Little-Known Nutrient for Healthier Aging

BY MARSHA MCCULLOCH, MS, RD

Many people know about the health benefits of **mushrooms**.

But few are aware of the compound that scientists believe is largely responsible for those benefits: **L-ergothioneine**.

A growing number of studies are linking L-ergothioneine to improved health and **youthful aging**.¹

The problem is that **L-ergothioneine** levels in the body naturally decline with age, especially after age **60**.²

Fortunately, oral L-ergothioneine, made using a specialized fermentation method, has been shown to boost levels in the body.³

L-ergothioneine is a powerful **anti-inflammatory**.^{4,5} In preclinical studies it has been shown to protect cells against **DNA damage**.^{6,7}

Human observational studies and clinical trials suggest it could improve **cognitive function**,^{3,8} promote **younger-looking skin**,⁹ support **cardiometabolic health**,¹⁰ improve **sleep**,¹¹ and reduce the risk of all-cause mortality.¹²



Understanding L-Ergothioneine

L-ergothioneine is an amino acid, but not one the body can produce.⁶

The only organisms known to make L-ergothioneine are certain **mushrooms** and a few microbes.^{6,13} Most people in the U.S. get only small amounts of L-ergothioneine in their diet.⁴

Once consumed, a special **transporter** in the body shuttles **L-ergothioneine** into cells.^{1,4}

L-ergothioneine is a powerful **antioxidant**.¹³ It concentrates in the mitochondria of cells and tissues, including those that are frequently exposed to harmful **oxidative stress**, such as the **brain, eyes, heart and blood vessels**, and **skin**.^{14,15} Preclinical studies have shown its potential to protect cells against damage to DNA, proteins, and lipids.^{16,17}

Interest in L-ergothioneine exploded when a study found that people in Italy (who consume **4.6 mg** of L-ergothioneine a day) had a significantly *longer life expectancy* than Americans (who average only **1.1 mg** of L-ergothioneine daily).⁴

When scientists administered L-ergothioneine to mice orally, their average **lifespan** increased by a stunning **21%** compared to untreated animals.¹⁸



Preserving Telomeres to Slow Aging

A key driver of biological aging and age-related disease is the shortening of **telomeres**.¹⁹

Telomeres are **protective caps** at the ends of chromosomes. Chromosomes are threadlike structures inside the nucleus of a cell, made up of DNA, proteins, and other material, that carry the genetic information for the whole organism and for each cell.²⁰ Every time cells divide, telomeres shorten.²¹

When telomeres get too short for the cell to divide, the cell may become **senescent**.¹⁹ Senescent cells can be dysfunctional and promote chronic inflammation.²²

The accumulation of senescent cells can promote visible signs of aging, such as **wrinkles**,²³ and increase risk of age-related health conditions,^{24,25} including **cognitive decline**.^{24,26,27}

Preclinical research suggests **L-ergothioneine** reduces telomere shortening, which may slow the aging process.^{5,21,28}

When scientists used **L-ergothioneine** to treat cultured **human cells** for eight weeks and compared them to untreated cells, they found the amino acid:²¹

- Boosted the median telomere length, and
- Reduced the percentage of short telomeres.

These benefits were especially strong when cells were exposed to **oxidative stress**.

Protecting Cognition

In a study of 470 older adults attending memory clinics, those with lower blood levels of **L-ergothioneine** had worse brain function, including poorer **memory**.²⁹

Over the next five years, those with lower L-ergothioneine levels had significantly faster rates of **decline** in overall cognitive function.²⁹

Another study found that **Alzheimer's disease** patients with lower L-ergothioneine levels had a **12% faster** rate of disease progression over two years.³⁰

To test whether taking oral L-ergothioneine could *improve* brain function and delay cognitive decline, scientists in Singapore enrolled 19 adults aged 60 and older who had **mild cognitive impairment**. They were randomized to receive **25 mg** of **L-ergothioneine** or a **placebo** three times a week for one year.⁸

The treatment group had significant improvements in **memory** and **learning ability** compared to the placebo.

The L-ergothioneine group also experienced stabilization of **neurofilament light chain** levels, a marker of brain injury and neurodegenerative disease,³¹ while the measure worsened in the placebo group.⁸

In a larger study, 140 healthy older adults with subjective memory concerns³ were given either **25 mg** of L-ergothioneine, **10 mg** of L-ergothioneine, or a placebo daily for 16 weeks.

While the **10 mg** dose boosted L-ergothioneine blood levels **six-fold**, the **25 mg** dose boosted L-ergothioneine levels **16-fold** in the same period.

Both L-ergothioneine groups had significant improvements in **brain function**, including:

- Executive function, the ability to plan and execute goals,
- Complex attention, focusing on multiple things at once,
- Cognitive flexibility, the ability to adapt to new or changing information, and
- Verbal memory.

But *only* the **25 mg** L-ergothioneine group had significant improvements in **prospective memory**, remembering to perform actions in the future, and in the ability to **fall asleep**.³

Support Healthy Aging with L-Ergothioneine

What You Need To Know

- **L-ergothioneine** is an amino acid found in mushrooms and a few other foods that helps promote youthful aging. Few people get enough from their diet, and the body can't make the compound.
- Higher dietary intake of L-ergothioneine is associated with longer **life expectancy**, lower rates of heart disease and cardiovascular mortality, and better brain function.
- Preclinical studies show that L-ergothioneine helps protect **telomeres**, potentially slowing biological aging.
- In a clinical trial, daily oral intake of **25 mg** of L-ergothioneine helped improve cognitive function and promoted quality sleep.



Other Health Benefits

Many other potential health benefits of L-ergothioneine have been uncovered, including:

Cardiometabolic wellness. In a population study that followed 3,236 adults for 20 years, higher blood levels of L-ergothioneine were associated with a **15% lower risk of heart disease**, a **21% lower risk of cardiovascular mortality**, and a **14% lower risk of death from any cause**.¹⁰

Improved sleep. When poor sleepers (ages 40 to 75) took **20 mg** of L-ergothioneine daily for four weeks, **sleep problems decreased** and **sleep quality improved**, compared to placebo.¹¹

These and other benefits may add up to better health and more youthful aging.

Summary

L-ergothioneine, an amino acid found in mushrooms, could be a game changer for youthful aging.

Preclinical research has shown it protects the **telomeres** of cells, helping to slow the aging process.

In human studies, L-ergothioneine has improved **cognitive ability** and **ability to fall asleep**.

Standardized **L-ergothioneine** produced by a specialized fermentation process has been shown to help boost body levels of this amino acid and shows promise to promote **healthy aging**. ■

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Restore Healthy Cellular Energy with PQQ

This formulation contains 20 mg of PQQ per capsule, which is the recommended daily dose.

PQQ helps support mitochondrial health, which produces cellular energy.¹⁻⁴

Studies show PQQ supports heart health and cognitive function, complementing CoQ10.⁵⁻⁸

PQQ helps protect against oxidative stress and encourages whole-body health.⁹



Item #01647 • 30 vegetarian capsules

Also available are 10 mg PQQ caps (Item #01500) and 100 mg Super Ubiquinol CoQ10 with PQQ (Item #01733).

This product is available at fine health food stores everywhere.

References

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These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

FEED YOUR BRAIN

Neuro-Mag® Magnesium L-Threonate

"It is my goal
to never run out
of this. Ever!"

Rusty

VERIFIED CUSTOMER
REVIEW



Item #01603

90 vegetarian capsules

SUPPORTS OVERALL COGNITIVE ABILITY

Neuro-Mag® Magnesium L-Threonate helps maintain working (short-term) memory, encourages healthy processing speed, and supports overall cognitive function.^{1,2}



Item #02032

93.35 grams of powder

These products are available at fine health food stores everywhere.

References: 1. *Nutrients*;14:5235.10.3390/nu14245235. 2. *J Alzheimers Dis.* 2016;49(4):971-90.

Magtein® is protected under a family of patents, pending patents, and is protected worldwide.
Magtein® is a trademark of and is licensed exclusively by ThreoTech LLC.

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

Comprehensive Senolytic Support

The **Senolytic Activator**® formula provides the following nutrients:

- **THEAFLAVINS**
(polyphenols from black tea)
- **BIO-QUERCETIN**®
(ultra-absorbable form)
- **APIGENIN**
(a natural flavonoid)
- **BIO-FISETIN**®
(up to **25 times** greater bioavailability)*

With age, our body accumulates **senescent cells** that affect the day-to-day function of the healthy cells around them.

Senolytics are compounds that promote the body's natural processes for clearing senescent cells.

The **Senolytic Activator**® supplement provides four ingredients, including a bioavailable form of the Bio-Fisetin® supplement to support healthy aging.

The suggested dose of the **Senolytic Activator**® supplement is **3 capsules** once a week. Each bottle lasts 3 months and costs very little.

This product is available at fine health food stores everywhere.

**Studied against powder fisetin (98% purity)*



Item #02301 | 36 vegetarian capsules
(Each bottle lasts 3 months)

Tears of Joy

"I'm happy with it!"

Mary

VERIFIED CUSTOMER
REVIEW

**Tears are a good thing—
until you don't have enough.**

Maqui berries (*Aristotelia chilensis*) produce compounds called **delphinidins** that encourage tear production—an up to **45%** increase after 30 days in one study. So where can you get a maqui extract with delphinidin? **Tear Support with MaquiBright®.**



Item #01918

30 vegetarian capsules



This product is available at fine health food stores everywhere.

MaquiBright® is a registered trademark of MAQUI NEW LIFE S.A, Chile and ORYZA OIL & FAT CHEMICAL CO., LTD., Japan.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Liposomal-Hydrogel™

VITAMIN



"I feel better about
my immune
system with it."

Mary

VERIFIED CUSTOMER
REVIEW



Item #02501

60 vegetarian tablets

This product is available at
fine health food stores everywhere.

Buffered **ascorbate** encased in two plant extracts (liposomes plus hydrogel fenu-greek) increases blood (plasma) exposure nearly **seven times** more compared to an equivalent dose of vitamin C as calcium ascorbate.¹

It also maintains vitamin C levels throughout the day.²

Just one vegetarian tablet daily provides **around-the-clock** vitamin C support.

References 1. Akay Internal Study. Liposomal vitamin C (calcium ascorbate) pharmacokinetics. Data on file. 2021.
2. Akay Internal Study. Liposomal hydrogel vitamin C pharmacokinetics. Data on file. 2021.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.



Good Things Come in Twos

Two-Per-Day Multivitamin Tablets

Item #02315 | 120 tablets

Two-Per-Day Multivitamin Capsules

Item #02314 | 120 capsules

Each bottle provides a two-month supply.

These products are available at
fine health food stores everywhere.

CAUTION: Individuals consuming more than 50 mcg (2000 IU)/day of vitamin D (from diet and supplements) should periodically obtain a serum 25-hydroxy vitamin D measurement. Vitamin D supplementation is not recommended for individuals with high blood calcium levels.

[†]Product ratings based on results of the 2024 ConsumerLab.com Survey of Supplement Users.
For more information, visit www.consumerlab.com/survey.

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#1 Rated
Multivitamins | 11 Time Winner![†]

TWO-PER-DAY Multivitamin provides:

Vitamin A (beta-carotene, and acetate)	1500 mcg RAE[^]
Vitamin D3 (cholecalciferol)	(2,000 IU) 50 mcg
Vitamin C (ascorbic acid, calcium and niacinamide ascorbates)	470 mg
Vitamin E (D-alpha tocopheryl succinate, D-alpha tocopherol)	67 mg
Vitamin E (gamma, delta, alpha, beta tocopherols)	20 mg
Vitamin B1 (thiamine HCl)	75 mg
Vitamin B2 (riboflavin, riboflavin 5'-phosphate)	50 mg
Vitamin B3 (niacinamide, niacinamide ascorbate)	50 mg NE[•]
Vitamin B5 (D-calcium pantothenate)	50 mg
Vitamin B6 (pyridoxine HCl, pyridoxal 5'-phosphate)	75 mg
Folate (5-MTHF)	680 mcg DFE[°]
Vitamin B12 (methylcobalamin)	300 mcg
Biotin	300 mcg
Iodine (potassium iodide)	150 mcg
Magnesium (magnesium oxide)	100 mg
Zinc (zinc citrate, L-OptiZinc® zinc mono-L-methionine sulfate)	25 mg
Manganese (manganese citrate, gluconate)	2 mg
Chromium [Crominex® 3+ chromium stabilized with Capros® amla extract (fruit), PrimaVie® Shilajit]	200 mcg
Molybdenum (amino acid chelate)	100 mcg
Inositol	50 mg
Alpha lipoic acid	25 mg
Bio-Quercetin® Proprietary Blend providing 35% quercetin (5 mg) [from Japanese sophora concentrate (flower bud)], 30% galactomannans (4 mg) [from fenugreek (seed)]	14 mg
Marigold extract [std. to 5 mg <i>trans</i> -lutein, 155 mcg <i>trans</i> -zeaxanthin]	11.12 mg
Apigenin	5 mg
Boron (boron amino acid chelate)	3 mg
Lycopene [LycoBeads® natural tomato extract (fruit)]	1 mg
Selenium [as sodium selenite, SelenoExcell® high selenium yeast, Se-methyl L-selenocysteine]	200 mcg

[^] RAE (retinol activity equivalents). [°]DFE (dietary folate equivalents). [•]NE (niacin equivalents).

For complete list of ingredients and dosages, visit www.LifeExtension.com

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

Ciao, Belly!

Say “goodbye” to belly fat and
“hello” to a trimmer waist with
Gummy Science™ Mediterranean
Weight Management!

Inspired by the healthy weight benefits of the Mediterranean diet, these gummies promote both fat and weight loss when combined with diet and exercise. This formula targets not just belly fat but the visceral fat that surrounds your organs.

If your goal is a trimmer waistline that’s “molto bene,” Life Extension’s new and improved sugar-free* gummies may be just the ticket.

Item #02506C

60 gummies



*Not a low-calorie food.



This product is available at fine health food stores everywhere.

This supplement should be taken in conjunction with a healthy diet and regular exercise program. Individual results are not guaranteed, and results may vary.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Reduce Nighttime Bathroom Visits

BY LAURIE MATHENA



Five Ways to Support Urinary Health

2017–2020 NHANES data show that about **40%** of U.S. men aged 40 and older are affected.⁵ After age 70, up to **60%** of men need to urinate at least **twice** per night.⁶

These nighttime bathroom trips contribute to increased risk of falls, sleep disturbance, depression, reduced daytime activity and work productivity, and elevated morbidity and mortality.³

Two of the underlying causes of **nocturia** include **enlargement** of the **prostate** gland (benign prostatic hyperplasia, or BPH) and **overactive bladder**.¹

The following five compounds have been shown to address men's urinary health from a variety of angles.

- **Beta-sitosterol** is a plant compound that can help mitigate underlying causes of LUTS (lower urinary tract symptoms) associated with prostate enlargement.⁷ In a clinical study of men with enlarged prostates, beta-sitosterol reduced urinary symptom severity by **50%**.⁸

As men get older, it is common to experience an increase in **lower urinary tract** symptoms such as urgency, incontinence, dribbling, and weak urine stream.¹

One of the most *common* and bothersome of these symptoms is **nocturia**, which is waking to urinate one or more times during the **night**.^{1,2} This disrupts **sleep**, while increasing the risk of falls and other serious health problems.³

Fortunately, nocturia does not have to be a normal part of life.

A novel combination of five compounds has been shown to help markedly **reduce** nocturia symptoms in men.⁴

- **Pygeum bark extracts** have been shown to help improve lower urinary tract symptoms and quality of life in men with BPH.⁹ One meta-analysis of clinical trials found that Pygeum extracts reduced nocturia by **19%**, reduced residual volume by **24%**, and increased peak urine flow by **23%** in men with BPH.¹⁰



- **Lycopene** is a carotenoid that was shown in a study to improve lower urinary tract symptoms, quality of life, and maximum urine flow rate in men with BPH.¹¹



- **Boron** has been shown in pre-clinical studies to reduce markers of inflammation,^{12,13} modulate sex-hormone production,¹³ and reduce the impact of growth factors that may contribute to prostate enlargement.¹⁴

- **Melatonin**, a hormone that helps some people sleep better,¹⁵ has been shown to reduce nocturia. In elderly men, supplementation was associated with less frequent nighttime urination and improved quality of life.¹⁶



Better Together

Based on the ability of these compounds to address numerous aspects of urinary health, **Life Extension** conducted a clinical trial to determine if they could work *together* to reduce the number of nighttime bathroom visits in men suffering from nocturia.⁴

For the trial, 30 healthy men from 45 to 75 years old with mild lower urinary tract symptoms took a blend of these five compounds every night before bed for 60 days.

They answered questions on the **International Prostate Symptom Score (IPSS)**, a questionnaire that assesses the severity of lower urinary tract symptoms at the beginning and end of the study.⁴

After 60 days, there was a **16.3%** decrease (improvement) in the overall IPSS scores from baseline. The impact on *nocturia* was especially notable.

At the beginning of the study, **87%** of the men had some degree of nocturia. After 60 days, only **23%** reported nocturia symptoms.

In the **37%** of men with severe nocturia (waking two to three times per night to urinate), **none** of them reported waking more than once per night after treatment.

In fact, by the end of the study, **not a single man** reported waking *more than once* per night to urinate.

Summary

Nocturia affects more than half of men over age 50. It is associated with an increased risk of falls and other serious health problems.

A novel combination of compounds can help reduce the frequency of nighttime urination while improving other lower urinary tract symptoms.

These compounds include beta-sitosterol, Pygeum bark extract, lycopene, boron, and melatonin. •

References

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YOU'VE GUT THIS



Item #02539

30 vegetarian capsules

Your gut microbiome is intricately linked to your well-being, so you want to keep it healthy. But your digestive tract bacteria change as you age, which can affect everything from your nutritional uptake to cholesterol.

The new FLORASSIST® Probiotic Youthful Gut formula is a novel probiotic + postbiotic combo designed to help turn back the clock by encouraging a variety of biomarkers associated with healthy aging.

Nourish your gut and support a long, healthy life with a daily probiotic designed for aging well.

This product is available at fine health food stores everywhere.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Some Things
Get Better With Age

Aged Black Garlic

FOR HEART HEALTH



Black garlic is created through a patent-pending, solvent-free aging process that can take up to 90 days.

This produces a high content of s-allyl-cysteine, a phytochemical associated with **cardiovascular** health.¹⁻⁴

Clinical research has shown that **aged black garlic** provides targeted support for healthy serum triglycerides, blood pressure, and cholesterol within normal range.⁴



Item #02530

30 **500 mg** vegetarian capsules



References

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4. *OAJCAM*. September 20, 2023;6(1).

This product is available at fine health food stores everywhere.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Get More Out of Life



Item #02230

60 vegetarian capsules

"I love this product!"

Susan

VERIFIED CUSTOMER
REVIEW

Striving for healthy aging? Start by protecting every cell in your body.

Resveratrol is a legendary nutrient that's good for your heart, mind, and cellular health.

Optimized Resveratrol Elite™ contains *trans*-resveratrol in a hydrogel coating—acting to improve bioavailability to cells throughout your body.

This product is available at fine health food stores everywhere.



These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

"Great product,
works well."

Lloyd

VERIFIED CUSTOMER
REVIEW



Share a Long, Healthy Life



GLUTEN
FREE

1
DAILY

NON
GMO
LE CERTIFIED

Item #01778

100 vegetarian capsules

Each bottle provides a supply that lasts
more than three months.

This product is available at
fine health food stores everywhere.

Selenium promotes the body's production of **glutathione**, a powerful cellular antioxidant. It also encourages healthy cell division, thyroid health, and immune function.

Super Selenium Complex combines three complementary forms of selenium with vitamin E for additional antioxidant protection.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.



CLEAR YOUR MIND

Brain Fog Relief restores mental clarity and focus with **mango leaf extract** and **peppermint oil**.

In clinical trials...

MANGO LEAF EXTRACT:^{1,2}

- Sharpened thinking
- Reduced mental fatigue
- Promoted focus and attention, and
- Promoted working memory

PEPPERMINT OIL:³

- Reduced mental fatigue
- Promoted attention and memory

One softgel provides **fast-acting** benefits within three hours.

References

1. *J Ethnopharmacol*. 2020 Oct 5;260:112996.
2. *Nutrients*. 2020 Jul 23;12(8).
3. *Nutrients*. 2018 Aug 7;10(8).

Zynamite® is a registered trademark of Nektium Pharma SL. Patents and patents pending.



Item #02510

30 softgels

This product is available at fine health food stores everywhere.

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NEW PRODUCTS

FOUR TWO ONE

PHAGES

PROBIOTICS

POSTBIOTIC



We've improved our flagship probiotic. In addition to the bacteriophages, which inhibit unwanted bacteria, we've also added a postbiotic shown to help relieve occasional gas and bloating and paired it with two clinically studied probiotic strains for optimal digestive health and comfort.

Item #02125

30 liquid vegetarian capsules



From **Boomer** to **Zoomer**

Meet our newest healthy aging formula!

Our once-daily supplement promotes vitality, helps maintain daily activity, and safeguards physical independence by supporting muscle strength and physical fitness with clinically studied ingredients (when combined with regular exercise).



Item #02545

30 vegetarian capsules



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The Science of a Healthier Life®

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IN THIS EDITION OF LIFE EXTENSION MAGAZINE®



16 CURB HUNGER TO LOSE WEIGHT

In a clinical trial of **overweight** adults, a blend of **plant extracts**, along with a modest diet and exercise program, led to close to **5% weight loss** in just *two months*.



24 BENEFITS OF BLUEBERRY

Clinical results reveal that **blueberries** *improved* **cardiovascular** function, blood **sugar**, and brain health.



32 VITAMIN D REDUCES DEPRESSION SYMPTOMS

Clinical trials found that oral **vitamin D** may help *prevent* or reduce symptoms of **depression** and improve **brain connectivity**.



42 NEW APPROACH FOR INTESTINAL HEALTH

In various **clinical trials**, a novel **postbiotic**, two **probiotics**, and four **phages** helped *alleviate* **gastrointestinal discomforts**, and improved digestion.



78 HEALTHIER AGING

L-ergothioneine, an amino acid, found in **mushrooms**, protected **telomeres** in preclinical studies. In **human** trials, **L-ergothioneine** *improved* **cognitive ability** and **cardio-metabolic** function.



90 REDUCE NIGHTTIME BATHROOM VISITS

In a clinical trial, **five compounds** helped *reduce* **nocturia symptoms** in men. After 60 days, not a *single* subject woke more than once a night to urinate.